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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,271	10/21/2003	Wan Gyo Jeong	SUN0030US	4943
23413 7590 12/29/2008 CANTOR COLBURN, LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER BECKLEY, JONATHAN R				
ART UNIT		PAPER NUMBER		
2625				
NOTIFICATION DATE		DELIVERY MODE		
12/29/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary

Application No.

10/691,271

Applicant(s)

JEONG, WAN GYO

Examiner

JONATHAN R. BECKLEY

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-9 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 3, 4, 5, and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over obviousness by **Bohn (U.S. Patent # 6,618,038.)**, and further in view of **Kinrot (US Patent 6,424,407)**.

Regarding **Claim 1**, **Bohn** teaches an optical image detector (**Column 3, lines 30-32**) that illuminates incident lights on a surface of an object (**Column 6, lines 21-24**), the optical image detector comprising:

a light source (**light source (LED) 156, Column 3, line 58**); and

an incident light generator configured to receive a light from the light source and to generate at least two groups of incident lights having different incident angles with respect to the surface of the object and directed toward the object to generate an image for surface morphology (**Column 6, lines 18-34**,
Noted: "the incident light path may extend from the LED, through the first aperture 150 and to the surface of the object" the first aperture, which includes a lens within is referenced to the incident light generator; and Column 8, lines 1-32; and See Figure 3; Noted: in another example where the light may light path may skip the first aperture to the

surface, Figure 3 discloses a curved reflector which separates the light received from the light source to the surface which would then be referenced to the incident light generator).

Bohn does not teach a single light source.

Bohn combined with Kinrot does teach a single light source (**Column 3, lines 66 – Column 4, lines 22**).

Bohn and Kinrot are combinable because they are both from the same art of subject matter wherein the mouse includes photo sensors for detecting movement of the mouse.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the Bohn with the teachings of Kinrot so to provide 2 incident light beams from one single light source (Column 3, lines 66 – Column 4, lines 22).

Regarding **Claim 3, Bohn combined with Kinrot** further discloses an optical sensor that is disposed over the surface of the object to sense the lights reflected from the surface of the object, wherein the optical sensor converts an image for the surface morphology of the object into photocurrents (**Bohn: Column 1, lines 15-21; and Column 2, lines 33-36**).

Regarding **Claim 4, Bohn** teaches a navigation device (**Column 13, line 8**) comprising:

a case including a lower panel having an opening (**Column 13, lines 18-20**);

a light source installed in the case (**light source (LED) 156, Column 3, line 58**);

and

an incident light generator disposed adjacent to the light source and configured to receive a light from the light source and to generate at least two groups of incident lights having different incident angles with respect to a surface of an object, wherein the incident lights are illuminated on the surface of the object through the opening (**Column 6, lines 18-34, Noted: "the incident light path may extend from the LED, through the first aperture 150 and to the surface of the object" the first aperture, which includes a lens within is referenced to the incident light generator; and Column 8, lines 1-32; and See Figure 3; Noted: in another example where the light may light path may skip the first aperture to the surface, Figure 3 discloses a curved reflector which separates the light received from the light source to the surface which would then be referenced to the incident light generator**).

Bohn does not teach a single light source.

Bohn combined with Kinrot does teach a single light source (**Column 3, lines 66 – Column 4, lines 22**).

Bohn and Kinrot are combinable because they are both from the same art of subject matter wherein the mouse includes photo sensors for detecting movement of the mouse.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the Bohn with the teachings of Kinrot so to provide 2 incident light beams from one single light source (Column 3, lines 66 – Column 4, lines 22).

Regarding **Claim 5, Bohn combined with Kinrot** further discloses wherein the light source is a light emitting device that generates infrared or visual spectrum rays (**Bohn: Column 5, lines 52-67**)

Regarding **Claim 8, Bohn combined with Kinrot** further discloses, further comprising an optical sensor that is disposed over the opening to sense the lights reflected from the surface of the object, wherein the optical sensor converts an image for the surface morphology of the object into photocurrents (**Bohn: elements 502 and 602; Column 1, lines 15-21; and Column 2, lines 33-36**).

1. **Claims 2, 6, 7, and 9 are rejected under 35 U.S.C. 103(a)** as being unpatentable over obviousness by **Bohn (U.S. Patent # 6,618,038.) combined with Kinrot (US Patent 6,424,407) in further in view of He (US Patent Number 6,540,356)**

Regarding **Claim 2, Bohn combined with Kinrot** discloses a first reflecting plate reflecting the lights of the light source to generate a first group of incident lights having a first incident angle with respect to the surface of the object (**Column 11, lines 16-24**);

a second reflecting plate reflecting the lights of the light source to generate a second group of incident lights having a second incident angle greater than the first incident angle with respect to the surface of the object (**Column 11, lines 16-24**).

Bohn combined with Kinrot does not disclose a third reflecting plate reflecting the lights of the light source to generate a third group of incident lights having a third incident angle greater than the second incident angle with respect to the surface of the object.

Bohn combined with Kinrot further combined with He does disclose a third reflecting plate reflecting the lights of the light source to generate a third group of incident lights having a third incident angle greater than the second incident angle with respect to the surface of the object (**element 11; Column 3, lines 5-30; and Column 6, lines 12-16**).

Bohn combined with Kinrot and He are combinable because they are both from the same art and classification of producing images with reflective image scanning methods, apparatuses and systems.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bohn combined with Kinrot with the teachings of He

so to change the incident angle of the incident lights so as to superimpose with the ideal light point and to obtain the two-dimensional profile (**See Abstract**).

Regarding **Claim 6, Bohn combined with Kinrot** does disclose a first group of incident lights having a first incident angle with respect to the surface of the object (**Column 11, lines 16-39**);

a second group of incident lights having a second incident angle greater than the first incident angle with respect to the surface of the object (**Column 11, lines 16-39**).

Bohn combined with Kinrot does not disclose a third group of incident lights having a third incident angle greater than the second incident angle with respect to the surface of the object.

Bohn combined with Kinrot further combined with He does disclose a third group of incident lights having a third incident angle greater than the second incident angle with respect to the surface of the object (**Column 3, lines 5-30**).

Bohn combined with Kinrot and He are combinable because they are both from the same art and classification of producing images with reflective image scanning methods, apparatuses and systems.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bohn combined with Kinrot with the teachings of He

so to change the incident angle of the incident lights so as to superimpose with the ideal light point and to obtain the two-dimensional profile (**See Abstract**).

Regarding **Claim 7, Bohn combined with Kinrot further combined with He** further discloses a first reflecting plate reflecting the lights of the light source to generate the first group of incident lights(**Bohn: Column 11, lines 16-24**); a second reflecting plate reflecting the lights of the light source to generate the second group of incident lights (**Bohn: Column 11, lines 16-24**); and a third reflecting plate reflecting the lights of the light source to generate the third group of incident lights (**He: element 11; Column 3, lines 5-30; and Column 6, lines 12-16**).

Regarding **Claim 9, Bohn combined with Kinrot** teaches an optical image detector (**Column 3, lines 30-32**) which illuminates incident lights on a surface of an object to generate an image corresponding to a surface morphology of the object(**Column 6, lines 21-24**), the optical image detector comprising:

a light source generating a first light (**light source (LED) 156, Column 3, line 58**); and

an incident light generator configured to reflect the first light to generate at least two groups of incident lights having different incident angles with respect to the surface of the object (**Column 6, lines 18-34, Noted: "the incident light path may extend from the LED, through the first aperture 150 and to the**

surface of the object" the first aperture, which includes a lens within is referenced to the incident light generator; and Column 8, lines 1-32; and See Figure 3; Noted: in another example where the light may light path may skip the first aperture to the surface, Figure 3 discloses a curved reflector which separates the light received from the light source to the surface which would then be referenced to the incident light generator),
and

wherein the incident light generator comprises:

- a first reflecting plate configured to reflect the first light to generate a first group of incident lights having a first incident angle with respect to the surface of the object (Column 8, lines 1-32; and See Figure 3; Noted: in another example where the light may light path may skip the first aperture to the surface, Figure 3 discloses a curved reflector which separates the light received from the light source to the surface which would then be referenced to the first reflecting plate; and Column 11, lines 16-24);
- a second reflecting plate configured to reflect the lights of the light source to generate a second group of incident lights having a second incident angle greater than the first incident angle with respect to the surface of the object (Column 6, lines 18-34, Noted: "the incident light path may extend from the LED, through the first aperture 150 and to the surface of the object" the first aperture, which includes a lens within is referenced to the second reflecting plate; and Column 11, lines 16-24).

Bohn combined with Kinrot does not disclose a third reflecting plate configured to reflect the lights of the light source to generate a third group of incident lights having a third incident angle greater than the second incident angle with respect to the surface of the object

Bohn combined with Kinrot further combined with He does disclose a third reflecting plate configured to reflect the lights of the light source to generate a third group of incident lights having a third incident angle greater than the second incident angle with respect to the surface of the object (**Column 3, lines 5-30**).

Bohn combined with Kinrot and He are combinable because they are both from the same art and classification of producing images with reflective image scanning methods, apparatuses and systems.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Bohn combined with Kinrot with the teachings of He so to change the incident angle of the incident lights so as to superimpose with the ideal light point and to obtain the two-dimensional profile (**See Abstract**).

Response to Arguments

3. Applicant's arguments, see Applicant Arguments/Remarks Made in an Amendment, filed 11/07/2008, with respect to the rejection(s) of claim(s) 1, 3, 4, 5, and 8 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made

in view of Bohn (U.S. Patent # 6,618,038.), and further in view of Kinrot (US Patent 6,424,407).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN R. BECKLEY whose telephone number is (571)270-3432. The examiner can normally be reached on Mon-Fri: 7:30-5:00 EST (Alternate Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TWYLER L. HASKINS can be reached on (571)272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Jonathan R Beckley/
Examiner, Art Unit 2625
12/22/2008

/Twyler L. Haskins/
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